AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application. Please amend claims 1, 10 and 12 as follows:

LISTING OF CLAIMS:

1. (Currently Amended) A method for optical measuring systems, comprising a sensor element connected to a measuring and control unit via [[an]] one single optical ~~connection~~ fiber and being adapted for providing a signal corresponding to a measurement of a physical parameter influencing the sensor element, said method comprising the steps of:

generation of a measuring signal that is brought to come in towards the sensor element, and

detection of said measuring signal in the measuring and control unit by a single detector, after influencing the measuring signal in the sensor element,

~~characterized by the method further comprising:~~

partial reflection of the measuring signal at a point along the one single optical ~~connection~~ fiber, located at a predetermined distance from the sensor element,

detection of the intensity of the signal corresponding to said partially reflected measuring signal by said single detector, and

determination of a measurement of said parameter based upon the intensity of the partially reflected signal and the intensity of the measuring signal.

2. (Previously Presented) The method according to claim 1, characterized by comprising:

determination of a value corresponding to the quotient of the intensity of said reflected signal and the intensity of said measuring signal, and

determination of a measurement of said parameter based upon said quotient.

3. (Previously Presented) The method according to claim 1, characterized by comprising:

determination of a value corresponding to the difference between the intensity of said reflected signal and the intensity of said measuring signal, and

determination of a measurement of said parameter based upon said difference.

4. (Previously Presented) A method according to claim 1, characterized by said measuring signal being a light pulse.

5. (Previously Presented) A method according to claim 1, characterized by the feeding of the measuring signal into the sensor element causing optical interference in a cavity of the sensor element.

6. (Previously Presented) A method according to claim 1, characterized by being used for measuring pressure, said sensor element defining a membrane, acted upon by the pressure surrounding the sensor element.

7. (Previously Presented) A method according to claim 1, characterized by being used for measuring the acceleration or the temperature of said sensor element.

8. (Withdrawn) A method for optical measuring systems, comprising a sensor element connected to a measuring and control unit via an optical connection and being adapted for providing a signal corresponding to a measurement of a physical parameter influencing the sensor element, said method comprising

generation of a signal which is brought to come in towards the sensor element, and

detection of said signal in said measuring and control unit after influencing the measuring signal in said sensor element,

characterized by the method further comprising determination of a measurement of the length of said optical connection, based upon a measured period of time elapsing from the generation of said signal until the detection of said signal.

9. (Withdrawn) The method according to claim 8, characterized by said length determination being used for identification of the current type of sensor element, said length of said optical connection being selected to correspond to a specific type of sensor element.

10. (Currently Amended) A device for optical measuring systems, ~~comprising~~ comprising:

a sensor element connected to a measuring and control unit via [[an]] one single optical ~~connection~~ fiber and being adapted for providing a signal corresponding to a measurement of a physical parameter influencing the sensor element, ~~said device further comprising~~

a light source functioning to generate a measuring signal brought to come in towards the sensor element, [[and]]

a detector for detecting the intensity of the measuring signal in the measuring and control unit, after influencing the measuring signal in the sensor element,

~~characterized by comprising~~ a semi-reflecting device for partial reflection of the measuring signal at a point along the one single optical ~~connection~~ fiber at a predetermined distance from the sensor element,

said detector being arranged for detection of the intensity of the signal corresponding to said partially reflected measuring signal, and ~~by comprising~~

an evaluation unit for determining a measurement of said parameter, based upon the intensity of the partially reflected signal and the intensity of the measuring signal from said detector.

11. (Previously Presented) The device according to claim 10, characterized by said sensor element comprising a cavity, shaped so as to create optical interference when feeding said measuring signal into the cavity.

12. (Currently Amended) The device according to claim [[9]] 11 , characterized by said cavity being obtained through building up molecular silicone and/or silicone dioxide layers, and an etching procedure.

13. (Previously Presented) The device according to claim 12, characterized by said cavity being obtained through utilizing a bonding procedure.